CLAIMS

What is claimed is:

1. An automatic customer maintenance system for automatically providing infrastructure maintenance in response to a customer form/report/ticket in a communications network that includes a core communications service and an Access Provider service, comprising:

a Work-Flow Manager, arranged to trigger, for each customer form/report/ticket, each automatic software program of a plurality of automatic software programs

10   in response to an associated milestone event for the customer form/report/ticket; and

a Maintenance Program Scheduler, coupled to the Work-Flow Manager, for invoking at least one predetermined maintenance software program based upon predetermined criteria being met by the form/report/ticket.

15   2.   The automatic customer maintenance system of claim 1 wherein the plurality of automatic software programs include:

an automatic diagnosing program for providing automatic diagnosis;

an automatic linking program for automatically linking the customer with an area to solve a problem;

20   an automatic notification program for automatically notifying a maintenance technician when the problem requires further analysis;

an automatic referral program for automatically referring the problem to the access provider service via a gateway;

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an automatic preparation for clearance program for automatically populating

clearance information and analysis codes on the ticket based on a diagnosis

conclusion sent by the access provider service;

an automatic progress reporting program for automatically determining when a

5 status is owed to the customer;

an automatic verification program for automatically verifying if the problem has

been fixed;

an automatic customer notification program for automatically conveying

clearance information for the customer; and

10 an automatic closing program for automatically checking for tickets that have

been conveyed to the customer.

3. The automatic customer maintenance system of claim 1 wherein the predetermined

maintenance software programs for the maintenance program scheduler include:

an automatic progress reporting program; and

15 an automatic closing program.

4. The automatic customer maintenance system of claim 1 wherein Access Provider

service is implemented using a gateway for access that is coupled to a data

communication network of the communications network.

5. The automatic customer maintenance system of claim 1 wherein the customer

20 form/report/ticket is initiated by an agent in a Custom Care Platform that is coupled to a

data communication network that delivers the customer form/report/ticket to a Business

Maintenance Platform for processing in accordance with at least the automatic software

programs.

6. The automatic customer maintenance system of claim 5 wherein the Business

Maintenance Platform includes:

     a Database for storing circuit and customer information;

     a Ticket Unit for processing the customer form/report/ticket;

     a Test Unit for testing a selected infrastructure portion of the communications

network;

     an Alarm Unit for recording problems that the system detects in the network; and

     an Event Unit having a Work-Flow Manager and a plurality of computer

programs/engines, wherein the Event Unit is used for monitoring events and initiating

activities based on events.

7. The automatic customer maintenance system of claim 1 wherein the Business

Maintenance Platform is coupled in parallel to a Data Communication Network, Service

Provisioning Systems, a Work Management System, Network Management Systems, a

Billing System, and a Gateway.

8. An automatic customer maintenance system having a Business Maintenance Platform

for automatically providing infrastructure maintenance in response to a customer

form/report/ticket in a communications network that includes a core communications

service and an Access Provider service, the Business Maintenance Platform comprising:

     a Database, for storing information related to circuits and customer information;

     a Ticket Unit, for processing the customer form/report/ticket;

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a Test Unit, for testing a selected infrastructure portion of the communications network;

an Alarm Unit, for recording problems that the system detects in the network; and

5 an Event Unit having a Work-Flow Manager and a plurality of computer programs/engines, wherein the Event Unit is used for monitoring events and initiating activities based on events,

wherein the Database, the Ticket Unit, the Test Unit, the Alarm Unit and the Event Unit are coupled in parallel to a data communication network, Service Provisioning Systems, a Work

10 Management System, Network Management Systems, a Billing System, and a Gateway to an Access Provider.

9. The automatic customer maintenance system of claim 8 wherein the Business Maintenance Platform is coupled to a Customer Care Platform wherein the customer

15 form/report/ticket is initiated by an agent in the Custom Care Platform that is coupled to the data communication network that delivers the customer form/report/ticket to the Business Maintenance Platform for processing.

10. The automatic customer maintenance system of claim 9 wherein processing includes utilizing a plurality of automatic software programs.

20 11. The automatic customer maintenance system of claim 10 wherein the plurality of automatic software programs includes:

an automatic diagnosing program for providing automatic diagnosis;

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an automatic linking program for automatically linking the customer with an area

to solve a problem;

an automatic notification program for automatically notifying a maintenance

technician when the problem requires further analysis;

5   an automatic referral program for automatically referring the problem to the

access provider service via a gateway;

an automatic preparation for clearance program for automatically populating

clearance information and analysis codes on the ticket based on a diagnosis

conclusion sent by the access provider service;

10   an automatic progress reporting program for automatically determining when a

status is owed to the customer;

an automatic verification program for automatically verifying if the problem has

been fixed;

an automatic customer notification program for automatically conveying

15   clearance information for the customer; and

an automatic closing program for automatically checking for tickets that have

been conveyed to the customer.

12.   The automatic customer maintenance system of claim 8 wherein time-based

maintenance software programs are initiated at predetermined times by a maintenance

20   program scheduler that is coupled to the Business Maintenance Platform, the time-based

maintenance software programs including:

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an automatic program reporting program for automatically determining when a

status is owed to the customer; and

an automatic closing program for automatically checking for tickets that have

been conveyed to the customer.

5   13.   The automatic customer maintenance system of claim 8 wherein core communications

service is monitored using a customer gateway for Web access that is coupled to a data

communication network of the communications network.

14.   The automatic customer maintenance system of claim 8 wherein the customer

form/report/ticket is initiated by an agent in a Custom Care Platform that is coupled to a

10   data communication network that delivers the customer form/report/ticket to a Business

Maintenance Platform for processing in accordance with at least the automatic software

programs.

15.   A method for automatically providing infrastructure maintenance in response to a

customer form/report/ticket in a communications network that includes a core

15   communications service and an Access Provider service, comprising the steps of:

generating a ticket/customer repair request regarding a problem;

diagnosing the problem;

testing to determine whether the problem has been fixed;

generating clearance and analysis codes;

20   notifying the customer that the system has repaired the problem; and

closing out the ticket/repair request upon successful repair of the problem.

16.   The method of claim 15 wherein generating a ticket/customer repair request regarding a

problem is accomplished by a customer and the ticket is transmitted to a Business

Maintenance Platform for automatic infrastructure maintenance processing.

17. The method of claim 15 wherein generating a ticket/customer repair request regarding a

problem is accomplished by an agent of a Customer Care Platform and transmitted to a

5 Business Maintenance Platform for automatic infrastructure maintenance processing.

18. The method of claim 15 wherein diagnosing the problem is accomplished by an

automatic diagnosing program for providing automatic diagnosis and an automatic

linking program for automatically linking the customer with an area to solve a problem.

19. The method of claim 15 wherein testing to determine whether the problem has been

10 fixed is accomplished by an automatic verification program for automatically verifying

if the problem has been fixed.

20. The method of claim 15 wherein generating clearance and analysis codes is

accomplished by an automatic preparation for clearance program for automatically

populating clearance information and analysis codes on the ticket based on a diagnosis

15 conclusion sent by the access provider service.

21. The method of claim 15 wherein notifying the customer that the system has repaired the

problem is accomplished by an automatic customer notification program for

automatically conveying clearance information for the customer that displays a circuit

trouble description to the customer via e-maintenance, a web-based system that provides

20 customers direct access to view/update their trouble ticket, and by an Interactive Voice

Response system.

22. The method of claim 15 wherein closing out the ticket/repair request upon successful

repair of the problem is accomplished by an automatic closing program for

automatically checking for tickets that have been conveyed to the customer.

23. The method of claim 15 wherein an automatic notification program for automatically

notifying a maintenance technician when the problem requires further analysis is utilized

5   when a trouble ticket is sent to a maintenance technician as soon as the problem is

diagnosed as a telephone service/core communications service problem/requires manual

intervention.

24. The method of claim 15 wherein an automatic progress reporting program for

automatically determining when a status is owed to the customer is utilized to

10   implement an Interactive Voice Response system that automatically phones the

customer periodically and informs him/her/an answering machine of the current status of

his/her ticket.

25. The method of claim 15 wherein an automatic verification program for automatically

verifying if the problem has been fixed is utilized to run tests and perform alarm checks

15   to determine if an Access Provider has fixed the problem that is being reported as

cleared or a manual intervention has occurred to solve the problem.

26. A method for automatically providing infrastructure maintenance in response to a

customer form/report/ticket in a communications network that includes a core

communications service and an Access Provider service, comprising the steps of

20   utilizing software programs for automatically:

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preparing, by one of a customer and an agent, a customer form/report/ticket

concerning a circuit problem and sending the customer form/report/ticket to a Business

Maintenance Platform,

determining whether the circuit problem reported has been caused by a higher

5   level facility/equipment/lower level circuit problem, and where the circuit problem

relates to a higher level facility/equipment, automatically preparing a second ticket for

the higher level facility/equipment and correlating the customer form/report/ticket and

the second ticket with respect to updates;

diagnosing the circuit problem and, where the circuit problem has been fixed,

10   initiating clearing of the ticket, and where the problem exists in the Access Provider's

portion of the circuit, automatically sending an electronic referral to an Access Provider,

and determining that manual intervention by a maintenance technician is needed,

sending an electronic message to the maintenance technician alerting the maintenance

technician to the need for repair;

15   sending, upon the Access Provider's/the maintenance technician's completion of

the repair, a message requesting verification that the problem has been fixed;

testing and performing alarm checks to determine if the circuit problem has been

repaired;

where the circuit problem has been repaired, pre-populating clearance

20   information and analysis codes on the customer form/report/ticket to indicate that the

circuit problem has been repaired;

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          providing an update to the customer, by one of an interactive voice response

system and an email, indicating that the problem is fixed; and

          where the customer confirms that the circuit problem is fixed, closing out the

37 CFR 1.126 ticket, and

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5   28. The method of claim 27 wherein, following clearing, alternatively, an email (EM) is sent

automatically to update the customer; and where the customer indicates that the problem

37 CFR 1.126 is fixed, automatically closing out the customer form/report/ticket.

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29. The method of claim 27 including automatically sending an electronic message to the

Access Provider to indicate that the public switched network service accepts closure

10 37 CFR 1.126 after verification that the circuit is working correctly.

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30. The method of claim 27 including automatically reporting upon one of a predetermined

time having elapsed, initiation by the automatic referral, initiation by the automatic

notification and an indication that a report on progress due is needed.

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